EOSDIS Core System Project

M&O Procedures: Section 7—System Monitoring

Interim Update

August 2002

Preface

This document is an interim update to the Mission Operations Procedures Manual for the ECS Project, document number 611-CD-600-001. This document has not been submitted to NASA for approval, and should be considered unofficial.
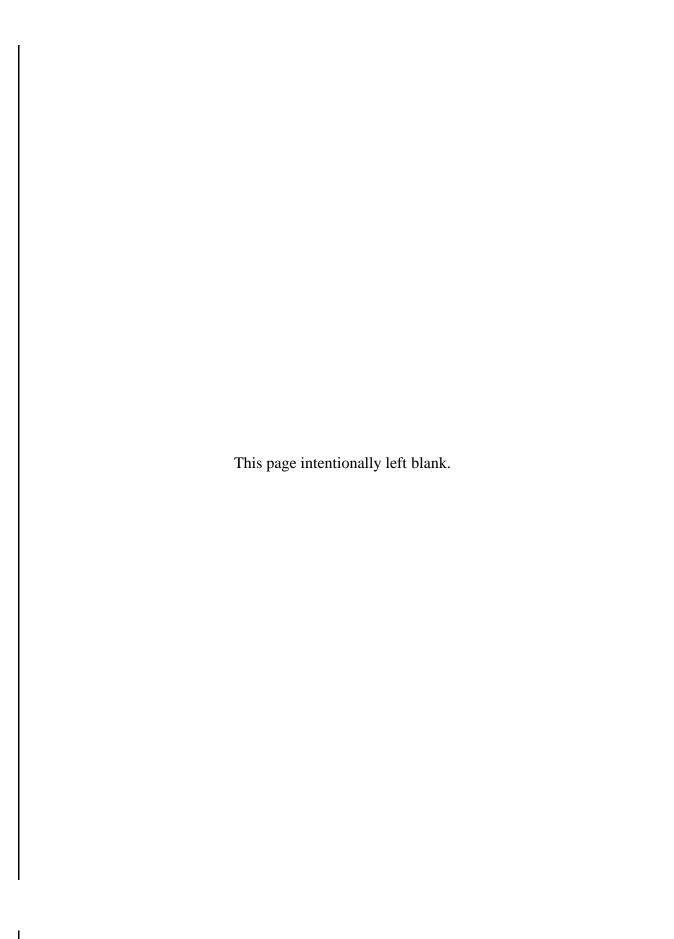
This update has been prepared to add information and procedures on the newly deployed *WhatsUp Gold* network monitoring software, to improve the logical organization and format of the System Monitoring Procedures, and to incorporate additional revisions appropriate for Release 6A. It constitutes a complete rewriting of the System Monitoring section.

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7. System Monitoring

This chapter covers procedures for the management operations that monitor the network and ECS server applications. Graphical tools available to monitor ECS status include two COTS programs, **WhatsUp Gold** and **Tivoli**, two ECS programs, **ECS Assistant/ECS Monitor** and **EcMs-Whazzup??**, and a script **EcCsIdPingServers** that permits an operator to ping all servers. These programs provide system monitors with real-time status of the system and indications of potential problem areas. Following this introduction, sections related to System Monitoring address procedures for the following functions:

- Section 7.1   Checking the Health and Status of the Network.

- Section 7.2   Monitoring and Managing Server Applications.

For each set of functions, an **Activity Checklist** table provides an overview of the tasks to be completed. The outline of the Activity Checklist is as follows:

Column one - *Order* shows the order in which tasks could be accomplished.

Column two - *Role* lists the Role/Manager/Operator responsible for performing the task.

Column three - *Task* provides a brief explanation of the task.

Column four - *Section* provides the Procedure (P) section number or Instruction (I) section number where details for performing the task can be found.

Column five - *Complete?* is used as a checklist to keep track of which task steps have been completed.

7.1 Checking the Health and Status of the Network

WhatsUp Gold (Version 7.03) is a graphical network monitoring application selected to monitor critical devices and services on the ECS Production Local Area Network (LAN) and/or additional ECS networks. It initiates alerts when it detects problems, and can send remote notifications by beeper, pager, and e-mail. It logs events to facilitate troubleshooting and reporting. It is implemented on Windows 2000 on a Personal Computer (PC) connected to the Production LAN. Detailed configuration and installation instructions are available in Document 914-TDA-208 *WhatsUp Gold 7.03 for the ECS Project, Release Notes*, and in the following vendor documents:

- *WhatsUp Gold version 7 User's Guide* accessible on the internet and downloadable at http:www.ipswitch.com/support/whatsup/index.asp

- *WhatsUp Gold version 7.03 Patch Release Notes* accessible on the internet and downloadable at http://www.ipswitch.com/support/whatsup/patch-upgrades.html.

The procedures in this section assume that the installation procedure specified in Document 914-TDA-208 has been executed. The specified procedure installs the WhatsUp Gold 7.03 application, creates a network map, sets up network map alert notifications, sets up a WinPopup notification message, sets up an SMTP e-mail notification message, sets the network map polling properties, sets device properties, saves the map, and starts WhatsUp Gold polling.

Once a network has been discovered by **WhatsUp Gold,** monitoring the state of the network can begin. Monitoring includes tasks such as checking the map for color alerts that indicate problems and checking for network changes.

Table 7.1-1 provides an Activity Checklist for checking the health and status of the network.

Table 7.1-1. Checking the Health and Status of the Network - Activity Checklist

Order	Role	Task	Section	Complete?
1	System Administra-tor/Operations Controller	Launching WhatsUp Gold and displaying the network map	(P) 7.1.1	
2	System Administra-tor/Operations Controller	Responding to color alerts and obtaining status of a node	(P) 7.1.2	
3	System Administra-tor/Operations Controller	Configuring a popup menu for a node or multiple nodes	(P) 7.1.3	
4	System Administra-tor/Operations Controller	Using the Net Tools Info Tool to obtain information on a node	(P) 7.1.4.1	
5	System Administra-tor/Operations Controller	Using the Net Tools Ping Tool to verify connectivity on a node	(P) 7.1.4.2	
6	System Administra-tor/Operations Controller	Using the Net Tools Traceroute Tool to trace a route	(P) 7.1.4.3	
7	System Administra-tor/Operations Controller	Reviewing the WhatsUp Gold Event Log	(P) 7.1.5.1	
8	System Administra-tor/Operations Controller	Launching Tivoli	(P) 7.1.6.1	

9	System Administrator/Operations Controller	Determining Monitor Profiles Active on a Specific Host	(P) 7.1.6.2	

7.1.1 Launching WhatsUp Gold and displaying the network map

The WhatsUp Gold application and graphical user interface (GUI) are installed and run in the Windows environment on a PC. Once the application is started and being used to monitor the network, it is typically left running at all times. This is because the application must be running with the network map open in order for its monitoring activities (i.e., polling and logging) to occur. Therefore, under normal circumstances, it will seldom be necessary to launch the application because it will be running continually. However, if something causes the application to be stopped (e.g., a failure of its host, or an inadvertent closure of the application), it will be necessary to start it again. Table 7.1-2 presents the steps required to start the WhatsUp Gold application. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Execute the WhatsUpG.exe application in the Windows environment (e.g., double click on the **WhatsUpG** listing in a Windows Explorer window, or click on the **Start** button in the Windows taskbar and then click on the **Run . . .** option to open the **Run** dialog, from which you then enter the path for the **WhatsUpG.exe** application. A typical path is **c:\Program Files\WhatsUp\WhatsUpG.exe**, which may be entered or selected by clicking on the **Browse** button and navigating to the path. When the path is displayed in the **Open:** field of the **Run** dialog, click on the **OK** button.).

- The **WhatsUp Gold** window is opened.

2   Follow menu path **File**→**Open . . .** .

- The **Open** dialog box is displayed.

3   Double click on the name of your network map, or select the name with a single click and then click on the **Open** button.

- The network map is displayed and polling begins.

Table 7.1-2. Launching WhatsUp Gold and Displaying the Network Map

Step	What to Do	Action to Take
1	Execute **WhatsUpG.exe**	**double-click** or run command
2	Display the **Open** dialog	Menu selection **File➔Open . . .**
3	Select the name of the network map and display the map	**double-click** or **click** on the name and then on the **Open** button

7.1.2 Responding to Color Alerts and Obtaining Status of a Node

Objects that have an abnormal condition can be identified by a change in appearance on the network map. Colors may be changed, but the following default conventions apply in a map window to indicate the status of a device or service:

- Device name highlighted: indicates that WhatsUp Gold has recorded an event for the device in a log.

- Device icon on a green square background: indicates that the device is up (i.e., responds to polling).

- Device icon on a light green diamond-shaped background: indicates that the device has missed at least one polling request.

- Device icon on a yellow diamond-shaped background: indicates that the device has missed two polling requests.

- Device icon on a red elongated diamond-shaped background: indicates that the device is down (i.e., is not accessible or has missed four consecutive polling requests). Once the device has missed eight polling requests, the background is changed to a dark red starburst.

- Device icon on a light purple octagon-shaped background: indicates that a standard service on the device is down.

- Device on a gray square background: indicates monitoring has been turned off for the device.

A color alert on a symbol indicates that some part of that object may have problems. To help isolate a fault on the network, it is possible to click with the right (or non-preferred) mouse button on the symbol with the color alert and bring up a status display that provides the overall status of the node based on TCP/IP polling, the Internet Control Message Protocol (ICMP) status, and the status of services on the node.

Table 7.1-3 presents the steps required to respond to color alerts and obtain the status of a node. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   With the network map open, use the right (or non-preferred) mouse button to click on the icon for the node showing a color alert (i.e., the node label is highlighted if there has been an entry in the Event Log related to the alert and the background is other than a green square or whatever you have selected as the indication for normal status).

- A popup menu is displayed.

2   On the popup menu, click on **Quick Status . . .**.

- The **Quick Status** dialog box for the selected node is displayed showing the **Status** (including a device status code of 0 to indicate that the device is up or other value to indicate an error, the text of an error message, and information about device polling, ICMP status, and a graph showing any monitored services in green if they are up or red if they are down) and providing access to charts of polling **History** and **Up-Time**. It also provides access to a **Log** display of any service or device "up" or "down" events for the selected node.

3   Review the status information and, in the left frame, click as desired on **History**, **Up-Time**, **Log**, or **Status** to display or re-display information in those categories.

4   Click on the **OK** button to dismiss the **Quick Status** dialog.

- The **Quick Status** dialog is closed.

5   To acknowledge the alert, follow menu path **Monitor→Acknowledge**.

- The highlighting is removed from the node label and additional instances of the alert on the node are prevented (unless the alert has been configured to be sent regardless of the acknowledgement – see **User's Guide**).

Table 7.1-3. Responding to Color Alerts and Obtaining the Status of a Node

Step	What to Do	Action to Take
1	Display the popup menu for a node with an alert	**(non-preferred) click**
2	Open **Quick Status** dialog	**single-click**
3	Review status and related information	read text, interpret graphs, **click(s)**
4	Activate the **OK** button to dismiss **Quick Status** dialog	**single-click**
5	Acknowledge the alert	Menu selection **Monitor→Acknowledge**

7.1.3 Configuring a Popup Menu for a Node or Multiple Nodes

The popup menu accessible using the right (or non-preferred) mouse button to click on a node on a network map typically includes the following choices:

- **Check Now** – initiate a single poll of the network.

- **1 Connect** – open a telnet session on the device represented by the node on the map.

- **2 Ping** – start the Ping tool to send ICMP packets to the device and view the results.

- **3 Traceroute** – start the Traceroute tool to examine the network path and the intervening routers from the WhatsUp Gold machine to the device.

- **4 Browse** – start the default browser using the IP address as the URL.

- **Customize Menu . . .** – open the **Item Properties** dialog box to permit adding, editing, deleting, or moving items on the popup menu.

- **Performance Graphs** – open **Report Job Properties** and **WhatsUp Gold Performance Graphs** dialogs to permit selecting and preparing performance reports and graphs.

- **SNMP View . . .** – start the SNMP View tool using the device's IP address. The SNMP View tool lets you read SNMP data on the device. This command appears only if the SNMP Manageable option (on the Device Properties (SNMP)) is selected.

- **Quick Status . . .** – open the **Quick Status** dialog to provide access to status, history, up-time, and log information for the device.

- **Properties . . .** – open the **Item Properties** dialog box to permit setting parameters for the device, including General functions, monitoring functions, services, alerts, and other categories (see **User's Guide**).

The popup menu may be configured or customized using the **Item Properties** dialog box. If it is desirable to configure the menu in the same way for multiple nodes, this can be achieved by selecting multiple nodes to be configured at the same time. Table 7.1-4 presents the steps required to configure the popup menu for a node or for multiple nodes. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   On the network map, select the node(s) for which the popup menu is to be configured. If more than one node is to be selected, use shift-click (i.e., hold down the shift key and click sequentially on the nodes to be selected) or click-drag (i.e., hold down the mouse button and drag diagonally to outline a rectangle enclosing the items to be selected, releasing the button when the items are enclosed).

- The selected nodes are indicated by the appearance of small white squares at the corners.

2   Use the right (or non-preferred) mouse button to click on the selected node (or one of the selected nodes).

- A popup menu is displayed.

3   On the popup menu, click on **Customize Menu . . .** (for one node) or **Add Custom Menus to Selected Devices . . .** (for multiple nodes).

- If one node was selected, the **Item Properties** dialog box is displayed to permit customization of the menu for that node. (*Note*: It is also possible to display this box for one node by selecting **Properties** from the popup menu and then clicking on **Menu** in the left frame of the resulting **Item Properties** dialog.)

- If more than one node was selected, the **Add to Selected Devices** dialog box is displayed to permit customization of the menus for the selected nodes. This box is similar to the **Item Properties: Menu** dialog, but menu items on any of the selected nodes appear in the dialog box, with a check box next to each item. For an item that is on all selected nodes, the check box is white and displays a check mark; for an item that is assigned to some but not all of the selected nodes, the check box is gray and displays a check mark.

4   To add a menu item, click on the **Add** button.

- The **Edit Menu Item** dialog box is displayed with three empty fields: (1) **Menu name:**; (2) **Command:**; and (3) **Arguments:**. Using this box, it is possible to create a menu item for starting a program when the item is chosen. The Menu name: field is used to specify the name of the menu item that will appear in the popup menu. The Command: field is used to enter the (file)name of any executable program to be started when the menu item is chosen from the popup menu. The Arguments: field is used to pass parameters to the specified program. See the **User's Guide** for detailed information on establishing and using popup menu items to run programs.

5   To select a displayed menu item for editing or moving, click on the menu item in the list.

- The selected item is highlighted.

6   To edit a selected item, click on the **Edit** button.

- The **Edit Menu Item** dialog box is displayed as in Step 4, with information for the selected item displayed in its three fields. The displayed data may be edited to change the menu display and/or actions (see **User's Guide**).

7   To move a selected item up or down in the list, click on the **Move Up** or **Move Down** button as appropriate.

- The selected item is moved up or down in the list as the button is clicked.

8   To delete a selected item for a single node, using the **Item Properties** dialog box, click on the **Delete** button.

- A confirmation dialog is displayed to ensure that you would like to remove the item; click on the **Yes** button to confirm.

9   For multiple nodes, to delete an item from the popup menu for all selected nodes, using the **Add to Selected Devices** dialog, click repeatedly on the accompanying checkbox until the check mark is removed.

- The check box is empty.

10   For multiple nodes, to assign a menu item to all of the selected nodes, using the **Add to Selected Devices** dialog, click repeatedly on the accompanying checkbox until the check mark is displayed in a white (i.e., not gray) box.

- The checkbox is white and the check mark is displayed.

11   Click on the **OK** button.

- The menu changes are applied and the **Item Properties** or **Add to Selected Devices** dialog is closed.

Table 7.1-4. Configuring the Popup Menu for a Node or Multiple Nodes

Step	What to Do	Action to Take
1	Select the node(s) for which the popup menu is to be configured	**single-click** (for single node) or **shift-click** or **click-drag** (for multiple nodes)
2	Display popup menu	**(non-preferred) click**
3	Open **Item Properties** (for single node) or **Add to Selected Devices** dialog box	**single-click**
4	To add a menu item, activate the **Add** button	**single-click**
5	To select a displayed item for editing or moving, highlight the item in the list	**single-click**
6	To edit a selected item, activate the **Edit** button	**single-click**
7	To move a selected item up or down, activate the **Move Up** or **Move Down** button	**click(s)**
8	To delete a selected item for a single node, activate the **Delete** button	**single-click**
9	For multiple nodes, to delete an item, toggle the checkbox to remove the check mark	**click(s)**
10	For multiple nodes, to assign a menu item to all selected nodes, toggle the checkbox to display the check mark in a white box	**click(s)**
11	Activate the **OK** button	**single-click**

7.1.4 Using Network Tools

WhatsUp Gold provides a set of tools to display a variety of information about nodes on the network. These tools are displayed on tabs, with the parameters and results area for one tool on each tab. The tools include:

- **Info** – display a summary of device information.

- **Time** – synchronize your computer's clock with a remote time server.

- **HTML** – query a web address.

- **Ping** – verify connectivity to a host.

- **TraceRoute** – Trace and view the route to an Internet host.

- **Lookup** – query Internet domain name servers for information about hosts and name servers.

- **Finger** – display information about users on a host.

- **Whois** – display information from the network information center about Internet domain ownership and Internet groups.

- **LDAP** – (Lightweight Directory Access Protocol); search directories for names and information stored in an LDAP directory on another computer.

- **Quote** – view quotations from a quote server.

- **Scan** – scan a range of IP addresses to create a network map.

- **SNMP** – view and graph Simple Network Management Protocol (SNMP) values for a device.

- **WinNet** – View Windows Network domains, hosts, and workstations.

- **Throughput** – test data throughput on the connection between your computer and a remote computer.

- **System Info** – view information about your local system.

Not all of these tools will necessarily be appropriate for ECS use, but the **User's Guide** provides detailed information on all of them. Procedures for three of these useful tools are provided here.

7.1.4.1 Using the Net Tools Info Tool to Obtain Information on a Node

The **Info** tool displays a summary of information about a network host or device, including the official host name, IP address, and contact information. An Info request on a host name also pings the host to verify connectivity. Table 7.1-5 presents the steps required to use the Net Tools Info Tool to obtain information on a node. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Follow menu path **Tools→Net Tools. . .**.

- The **Net Tools** window is displayed.

2   If necessary, click on the **Info** tab to access the **Info** tab display (when the **Net Tools** window is opened, WhatsUp Gold displays the tab most recently accessed).

- The **Info** tab controls and fields are displayed.

3   In the **Host Name or IP Address:** field, type the name or IP address of the host to be queried (this must be a fully qualified host name or address).

- The typed entry is displayed in the field.

4   Click on the **<u>Start</u>** button.

- A **Searching . . .** indicator appears and the **<u>Start</u>** button toggles to **<u>Stop</u>** to show that the query is in progress. At any time during the query, a click on the **Stop** button stops the query.

- The results of the query are displayed. (A click on the **<u>Clear</u>** button erases the results from the display window.) The **List View/<u>R</u>eport View** button permits toggling between the Report View and the List View of the results. The Report View is a summary showing:

  - Official Name.

  - Domain Name.

  - Date the record was created.

  - Date the record was last updated.

  - Date the database was last updated.

  - Contact information (from the Whois database).

  - IP Addresses and Domain Servers.

  The List View is a detailed list of the obtained information, including the results of the ping and more extensive information on the query.

Table 7.1-5. Using the Net Tools Info Tool to Obtain Information on a Node

Step	What to Do	Action to Take
1	Follow menu path **<u>Tools</u>→<u>N</u>et Tools**	**clicks**
2	Ensure **Info** tab is displayed	**single-click**
3	In the **Host Name or IP Address:** field, type the name or IP address of host to be queried	enter text
4	To start the query, activate the **<u>Start</u>** button	**single-click**

7.1.4.2 Using the Net Tools Ping Tool to Verify Connectivity on a Node

The **Ping** tool is a network diagnostic tool used to verify connectivity to a selected system on the network. This tool sends a data packet (an ICMP "echo request") to a remote host and displays the results for each "echo reply." This pinging command also displays the time for a response to arrive in milliseconds, as well as debugging information about the network interface. Multiple instances of the **Ping** tool may be active simultaneously.

The use of the **Ping** tool provides a quick way to verify that a device is not functioning. If the ping operations do not produce any responses or they time out, then the node is probably down or otherwise unreachable over the network. See Section 7.1.5 Checking for Event Notifications to verify event status of the node. If a Fault has occurred see Section 8 on Problem Management and Section 21 on COTS Hardware Maintenance.

Table 7.1-6 presents the steps required to use the Net Tools Ping Tool to verify connectivity on a node. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Follow menu path **Tools**→**Net Tools. . .**.

    • The **Net Tools** window is displayed.

2   If necessary, click on the **Ping** tab to access the **Ping** tab display (when the **Net Tools** window is opened, WhatsUp Gold displays the tab most recently accessed).

    • The **Ping** tab controls and fields are displayed.

3   In the **Host Name or IP Address:** field, type the name or IP address of the host to be checked (this must be a fully qualified host name or address).

    • The typed entry is displayed in the field.

4   Click one of the radio buttons below the **Host Name or IP Address:** field to specify the protocol to use for pinging (use **ICMP** for TCP/IP hosts, **IPX** for Novell NetWare hosts, or **NetBEUI** for Windows network hosts).

    • The selected radio button is filled to indicate the specified protocol.

    • *Note*: To ping an IPX device, Microsoft's NWLink IPX/SPX Compatible Transport must be installed and running on the WhatsUp Gold system (see "System Requirements" in the **User's Guide**).

5   If it is desired to change the default number of pings to be sent, click at the end of the **Count:** field.

    • The cursor is displayed at the end of the **Count:** field.

6   To set a new value for **Count:**, use the **Backspace** key to remove the current value, and type the new value.

    • The typed value appears in the **Count:** field.

7   Repeat Steps 5 - 6 for other options you wish to change, substituting **Delay (sec.):**, **Size**, or **Timeout (ms):** for the field name of the option to be changed, specifying respectively the number of seconds to wait between pings, the length in bytes of each packet to be sent by the **Ping** command, and the number of milliseconds of non-response from the host to be considered a failure of the ping.

8   Click on the **<u>Start</u>** button.

- The **<u>Start</u>** button toggles to **<u>Stop</u>** to show that the ping operation is in progress. At any time during the operation, a click on the **Stop** button stops the pinging.

- The display field at the bottom of the window shows the results of the pings. (A click on the **<u>Clear</u>** button erases the results from the display window.) The **<u>List View</u>/<u>Report View</u>** button permits toggling between the Report View and the List View of the results. The Report View provides, for each ping as it occurs, the address, the number of bytes sent, the response time, and the status. The List View lists the pings, the result for each packet, and the retry code.

Table 7.1-6. Using the Net Tools Ping Tool to Verify Connectivity on a Node

Step	What to Do	Action to Take
1	Follow menu path **<u>Tools</u>→<u>Net Tools</u>**	**clicks**
2	Ensure **Ping** tab is displayed	**single-click**
3	In the **Host Name or IP Address:** field, type the name or IP address of host to be checked	enter text
4	Specify the protocol to use for pinging	**single-click**
5	If it is desired to change the number of pings to be sent, move the cursor to the **Count:** field	**single-click**
6	To set a new value for **Cou<u>n</u>t:**, type the new value in the field	enter text
7	Repeat Steps 5 - 6 for other options to be changed	
8	To initiate the ping(s), activate the **<u>Start</u>** button	**single-click**

7.1.4.3 Using the Net Tools Traceroute Tool to Trace a Route

The **Traceroute** tool permits the operator to trace and view the route an IP packet follows from the local host to another host on the network. Response times are displayed in milliseconds and vary depending on network load. **Traceroute** can be helpful for finding potential trouble spots on large and complex networks that are connected by routers. The results of a traceroute operation can be displayed on a network map.

Table 7.1-7 presents the steps required to use the Net Tools Traceroute Tool to trace a route. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Follow menu path **<u>Tools</u>→<u>Net Tools</u>. . .**.

- The **Net Tools** window is displayed.

2   If necessary, click on the **Traceroute** tab to access the **Traceroute** tab display (when the **Net Tools** window is opened, WhatsUp Gold displays the tab most recently accessed).

- The **Traceroute** tab controls and fields are displayed.

3   In the **Host Name or IP Address:** field, type the name or IP address of the host to which the route is to be traced (this must be a fully qualified host name or address).

- The typed entry is displayed in the field.

4   If it is desired to change the maximum number of hops to trace before ending the traceroute operation (a "hop" is the passing of an IP packet from one host to another), click at the end of the **Maximum Hopcount:** field.

- The cursor is displayed at the end of the **Maximum Hopcount:** field.

5   To set a new value for **Maximum Hopcount:**, use the **Backspace** key to remove the current value, and type the new value.

- The typed value appears in the **Maximum Hopcount:** field.

6   If it is desired to change the number of milliseconds of non-response from the host to cause the Traceroute to fail, click at the end of the **Timeout (ms):** field.

- The cursor is displayed at the end of the **Timeout (ms):** field.

7   To set a new value for **Timeout (ms):**, use the **Backspace** key to remove the current value, and type the new value.

- The typed value appears in the **Timeout (ms):** field.

8   If it is desired to specify that WhatsUp Gold is to map the results of the Traceroute operation, click on the **Map Results** checkbox.

- The clicked box displays a checkmark to indicate its selection, and when **Traceroute** is run, the route will be drawn on the network map, displaying an icon for each router and showing the connections from router to router until it reaches the host.

9   If it is desired to specify that the host names of each router along the route are to be displayed along with the IP addresses, click on the **Resolve Addresses** checkbox.

- The clicked box displays a checkmark to indicate its selection, and when **Traceroute** is run, the host names as well as the IP addresses will be shown for each router (instead of just the IP addresses). This will add time to the Traceroute operation to resolve the IP addresses.

10   If **Map Results** is checked and it is desirable to set dependencies such that each router found is to be set as an "up" dependency on the previous router in the route, click on the **Set Dependencies** checkbox. This choice is only available when **Map Results** is

checked. It means that when WhatsUp Gold polling finds a router down, it will not poll routers further along the route to a host.

- The clicked box displays a checkmark to indicate its selection, and when **Traceroute** is run, each router found will be set as an "up" dependency on the previous router in the route.

11   Click on the **Start** button.

- An indicator shows the Traceroute operation in progress and the **Start** button toggles to **Stop** to show that the operation is in progress. At any time during the operation, a click on the **Stop** button stops the tracing.

- The display field at the bottom of the window shows the results of the traceroute operation. (A click on the **Clear** button erases the results from the display window.) The **List View/Report View** button permits toggling between the Report View and the List View of the results. The Report View provides for each hop as it occurs the address, the response time or Round Trip Time (RTT), and the status. The List View lists the hops, addresses, and more detailed information on the tracing of the route.

Table 7.1-7. Using the Net Tools Traceroute Tool to Trace a Route

Step	What to Do	Action to Take
1	Follow menu path **Tools**→**Net Tools**	**clicks**
2	Ensure **Traceroute** tab is displayed	**single-click**
3	In the **Host Name or IP Address:** field, type the name or IP address of host to which the route is to be traced	enter text
4	If it is desired to change the maximum number of hops to trace before ending the traceroute operation, move the cursor to the **Maximum Hopcount:** field	**single-click**
5	To set a new value for **Maximum Hopcount:**, type the new value in the field	enter text
6	If it is desired to change the number of milliseconds of non-response from the host to cause the Traceroute to fail, move the cursor to the **Timeout (ms):** field	**single-click**
7	To set a new value for **Timeout (ms):**, type the new value in the field	enter text
8	If a map of the Traceroute results is desired, select **Map Results**	**single-click**
9	If router names are desired in the Traceroute results, select **Resolve Addresses**	**single-click**
10	If **Map Results** is selected and router dependencies are desired, select **Set Dependencies**	**single-click**
11	To initiate the Traceroute operation, activate the **Start** button	**single-click**

7.1.5 Using WhatsUp Gold Logs

WhatsUp Gold captures data in four types of logs:

- **Syslog** – logs standard UDP messages sent from devices (e.g., routers, switches, UNIX hosts).

- **Event Log** – logs events (changes to network status, such as a device going down or a device coming back up). The Event Log provides a history of what has occurred on the network. An associated **Debug Log** window permits viewing events as they occur.

- **Statistics Log** – records polling statistics (accumulated round trip times, or RTT, of polls sent to a device) to measure the availability and performance of a device.

- **SNMP Trap Log** – displays all SNMP traps that have been received. To enable SNMP traps, the SNMP trap handler must be specifically enabled (refer to **User's Guide**).

Detailed information on the nature of the logged data and the log designations is provided in the **User's Guide**. The **User's Guide** also describes how to change the way events are logged, and how to create reports and graphs using the logged data to show the status of the network in several ways (e.g., performance graphs, event reports, and statistics reports. Only reviewing of the Event Log is described here, because of its potential utility in troubleshooting.

7.1.5.1 Reviewing the WhatsUp Gold Event Log

The Event Log stores data in weekly file increments with the following file format: **EV-yyyy-mm-dd.tab**. The log automatically records application-level events (e.g., a device or service going down) for devices that have **Enable Logging** selected in the **Alerts** dialog box. After sufficient event data logging, the data can be used to generate reports. The data can also be saved in a tab-delimited file that can be imported to another application, such as a spreadsheet program. It may also be useful just to view the Event Log for information related to an observed problem. For example, if the network map shows a color alert for a device (see paragraph 7.1.2) and the device does not respond to a ping (see paragraph 7.1.4.2), the Event Log may provide additional information concerning the time the device went down and a message addressing the problem.

Table 7.1-8 presents the steps required for reviewing the WhatsUp Gold Event Log. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Follow menu path **Logs**→**Event Log . . .**.

- The **Event Logs - <*date range*>** window is displayed. *Note*: The date range is the current week, and the events are displayed in raw format (the **Raw** radio button is filled to indicate its selection) with the most recent first. It is possible to click on the **Formatted** radio button to select a display showing the date and time information in *mm/dd/yyyy* and *hh:mm:ss* format, with column headers that can be clicked to sort the list by date, time, or message.

2   Review the list of events to locate a message identifying an **Alert** or **DOWN** event for any device that has shown a color alert on the network map or that has failed to respond to pinging.

- The message provides the date and time of the event, as well as specific information in the message concerning the type of event.

3   If it is desirable to view events from the prior week, click on the **Back** icon (⬅).

- The events from the previous week are displayed. *Note*: The date range specifies the prior week, and the events are displayed in the currently selected format (raw or formatted) with the most recent first. There are other icons: a **Filter** icon (or menu equivalent) permits customizing the log viewer to show logs in a different time span other than weekly; a **Find** icon permits locating text in the display; a **Print** icon permits printing the contents of the display; and other navigation icons permit moving to specific ranges of events for display. The **User's Guide** provides detailed guidance on navigating and locating text in the Event Log display.

4   If it is desirable to print the contents of the display, click on the **Print** icon.

- The **Print** dialog box is displayed, permitting specification of a printer, print range, and number of copies.

Table 7.1-8. Reviewing the WhatsUp Gold Event Log

Step	What to Do	Action to Take
1	Follow menu path **Logs**→**Event Logs**	**clicks**
2	Review list of events for suspect device	read text
3	If it is desired to view events from other than the current week, activate the **Back** icon button or other navigation button	**click(s)**
4	If it is desired to print the contents of the display, activate the **Print** icon button and, in the resulting dialog, specify print options	**clicks**

7.1.6 Tivoli Management Environment

Another powerful COTS program used to monitor the system is Tivoli Management Environment. Version 3.6 is the current version installed at the DAACs. Tivoli is based on a core program, Tivoli Framework, to which specific user applications are added to meet management and monitoring requirements. These applications, when configured for specific ECS functions, provide detailed information and notification of events on a programmable polling basis.

Specific Tivoli Environment applications used in ECS are:

- **Tivoli Enterprise Console**. A rules-based management application that collects, processes, and automatically responds to common management events.

- **Tivoli Software Distribution**. A management application that provides for the distribution and installation of software on machines in a heterogeneous networking computing environment.

- **Tivoli Distributed Monitoring**. A management application for monitoring system and application resources and generating events and alarms on a network-wide basis. It provides availability data and performs automated actions based on the monitored data.

Tivoli Management Environment, when used in conjunction with Whazzup?? and ECS Monitor (see section 7.2), can provide detailed, current data on system status.

Tivoli Management Region. The core of a Tivoli Management Environment is the Tivoli Management Region, or TMR. It consists physically of a primary Server and its clients. In ECS, the TMR is normally installed on the MSS Server.

Complete installation instructions and release notes for Tivoli Management Environment, Version 3.6 Upgrade for the ECS Project, are contained in the ECS Project document 914-TDA-043-REV01.

The program is accessed by various levels of administrators within Tivoli. During installation, the installer assumes the highest level of administrator, the Super Administrator. After installation, other administrators are created and provided specific authorization roles as required, such as Senior, Admin, and User. Administrators can only create other administrator accounts that have capabilities equal to, or less than, their own level.

Tivoli Policy Region. Monitoring of system resources uses displays that are organized analogous to a hierarchical file structure. Accessed through the top-level policy region icon and displayed on the Administrator Desktop, a series of screens display specific hosts and agents. A policy region is a special collection of resources that share one or more common policies. An administrator can create special sub-policy regions to monitor specific areas of interest. Policy sub-regions can be arbitrarily nested and can contain any desired set of managed resources.

Tivoli Distributed Monitoring. The component of Tivoli Management Environment that establishes system monitoring criteria is the Tivoli Distributed Monitoring application. Tivoli

Distributed Monitoring checks the status of a variety of networked resources, such as systems, applications, and processes. Through the use of profiles, Distributed Monitoring enables system administrators to set monitoring policy and to change monitoring parameters for any number of related, remote systems from a single location. Distributed Monitoring profiles also define automated responses. These responses can be as simple as changing the status of an icon or sending E-mail to an administrator, or as complex as sending an SNMP trap or running a user-specified program or script.

Key items that can be set for any given monitor are:

- Set the response level.

- Determine monitor trigger.

- Send a Tivoli Notice.

- Activate a Pop-up Window.

- Change an icon's status.

- Send E-mail.

- Log to a file.

- Run a program.

Multiple monitoring profiles can be created and distributed across several hosts. Administrators can also determine monitor profiles assigned to specific hosts.

7.1.6.1 Launching Tivoli

The Tivoli Startup screen appears briefly upon starting the program. The Administrator Desktop is displayed immediately after the appearance of the Startup screen. The Desktop screen features icons that permit access to various administrative functions. Table 7.1-9 presents the steps required for launching Tivoli. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Access the command shell.

- The command shell prompt is displayed.

NOTE: Commands in Steps 2 through 8 are typed at a UNIX system prompt.

2   Type **setenv DISPLAY** *clientname***:0.0** and then press the **Return/Enter** key.

- Use either the terminal/workstation IP address or the machine-name for the *clientname*.

3   Start the log-in to the Tivoli host by typing **/tools/bin/ssh** *hostname* (e.g., **e0mss21**, **g0mss21**, **l0mss21**, or **n0mss21**) and then press the **Return/Enter** key.

- If you receive the message, **Host key not found from the list of known hosts. Are you sure you want to continue connecting (yes/no)?** type **yes** ("**y**" alone does not work).

- If you have previously set up a secure shell passphrase and executed **sshremote**, a prompt to **Enter passphrase for RSA key '**<*user@localhost*>**'** appears; continue with Step 4.

- If you have not previously set up a secure shell passphrase; go to Step 5.

4   If a prompt to **Enter passphrase for RSA key '**<*user@localhost*>**'** appears, type your *Passphrase* and then press the **Return/Enter** key. Go to Step 6.

5   At the <*user@remotehost*>**'s password:** prompt, type your *Password* and then press the **Return/Enter** key.

- You are logged into the Tivoli host machine.

6   Type **cd /etc/Tivoli** and then press the **Return/Enter** key.

- You are in the Tivoli directory on host *x0mssxx*.

7   Type **source setup_env.csh** and then press the **Return/Enter** key.

- The environment variables for Tivoli are set.

8   Type **tivoli –f** and then press the **Return/Enter** key.

- The Tivoli Startup screen appears briefly, followed by the TME Administrator Desktop.

Table 7.1-9. Launching Tivoli

Step	What to Do	Action to Take
1	Access command shell	
2	**setenv DISPLAY** *clientname*:**0.0**	enter text, press **Return/Enter**
3	**/tools/bin/ssh** *hostname*	enter text, press **Return/Enter**
4	*Passphrase* (or Step 5)	enter text, press **Return/Enter**
5	*Password*	enter text, press **Return/Enter**
6	**cd / etc/Tivoli**	enter text, press **Return/Enter**
7	**source setup_env.csh**	enter text, press **Return/Enter**
8	**tivoli –f**	enter text, press **Return/Enter**

7.1.6.2 Determining Monitor Profiles Active on a Specific Host

Table 7.1-10 presents the steps required for determining monitor profiles active on a specific host. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Start Tivoli using the procedure for Launching Tivoli (see paragraph 7.1.6.1).

- The Tivoli Startup screen appears temporarily, followed by the TME Administrator Desktop screen.

2   Double-click on the region icon to display Policy Region components.

- A scrollable window of components is displayed.

3   Double-click on any component icon.

- A scrollable window of Monitor Profiles is displayed.

4   Double-click on any specific Profile Monitor icon to determine profile characteristics.

- The **Edit Monitor** window for the selected profile is opened to provide access to the profile characteristics and settings for that profile.

Table 7.1-10. Determining Monitor Profiles Active on a Specific Host

Step	What to Do	Action to Take
1	Start Tivoli	use procedure 7.1.6.1 **Launching Tivoli**
2	Open **Policy Region** contents window for the region containing the host of interest	**double-click**
3	Display the collection of profiles on the host of interest	**double-click**
4	Open the **Edit Monitor** to display the characteristics and settings for any desired profile	**double-click**

7.2.3.4 Tivoli Enterprise Console

The component of Tivoli Management Environment that provides the interface for system monitoring is the Tivoli Enterprise Console. It monitors events defined by the administrator across individual or groups of items. An event is any significant change in the state of an application or system resource, such as a network or host. The Event Console is the interface that an administrator uses to receive notification of events and to respond to events. An Event Group is depicted in the Event Groups event console dialog. There is one icon for each event group that is monitored.

The Enterprise Console icons are displayed in a hierarchy that can be traverssd to determine specific errors in addition to any programmed notifications as determined by the administrator.

For detailed information and specific configuration and utilization of the Tivoli Management Environment, all documentation is available directly from the vendor in PDF format at the following URL: http://www.tivoli.com/support/documents.

7.2 Monitoring and Managing Server Applications

There are two applications and an accompanying script provided as part of ECS for monitoring and managing server applications. **Whazzup???** is a management tool that provides operators and maintainers with a means of monitoring and checking servers, for quickly identifying servers that may have problems, and for isolating faults. It is a web-based application, and is therefore accessed by means of browser software. It provides the following general features:

- host and mode views of network resources.
- status information on resources (indicated by color coding: purple indicates inability to ping the specified host, blue indicates incomplete data collection, red indicates that the server is down, and yellow indicates that a warning threshold has been exceeded).
- performance monitoring capability.

Another set of tools for monitoring and managing system resources is **ECS Assistant** and its companion, **ECS Monitor**, which offer:

- installation support.
- indication of network and server status and changes.

There is an accompanying script, **EcCsIdPingServers**, which provides the capability to ping all servers.

Table 7.2-1 provides an Activity Checklist for monitoring and managing server applications.

Table 7.2-1. Monitoring and Managing Server Applications - Activity Checklist

Order	Role	Task	Section	Complete?
1	System Administra-tor/Operations Controller	Launching EcMs-Whazzup?? and Determining What's Down	(P) 7.2.1	
2	System Administra-tor/Operations Controller	Starting ECS Assistant	(P) 7.2.2.1	
3	System Administra-tor/Operations Controller	Starting ECS Monitor	(P) 7.2.2.2	
4	System Administra-tor/Operations Controller	Using EcCsIdPingServers to Ping All Servers in a Mode	(P) 7.2.2.3	

7.2.1 Launching EcMs-Whazzup?? and Determining What's Down

A powerful COTS program that has been modified for ECS and used to monitor the ECS system is EcMsWz-Whazzup??. It is a web-accessed program that provides a graphical display of Host Status, Mode Status, Mode Verification and Performance Management. The welcome screen has buttons and links at the bottom permitting an operator to view status by various means (e.g., host, mode), verify modes and view what servers may be down, and access data on performance. The **Performance Stats** screen provides a quick overview of the system status; if Whazzup is unable to ping a host, the row for that host is highlighted in purple.

These functions of Whazzup?? provide graphical displays of host and software-server status in real-time mode. When used in conjunction with WhatsUp Gold, Tivoli and ECS Assistant, Whazzup?? can provide System Administrators with a comprehensive knowledge of the system's status.

Table 7.2-2 presents the steps required for launching Whazzup?? and determining what's down. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1 On workstation *x*0ins02, at the UNIX prompt in a terminal window, type **netscape &** and then press the **Return/Enter** key.

- NOTE: The *x* in the workstation name will be a letter designating your site: **g** = GSFC, **m** = SMC, **l** = LaRC, **e** = EDC, **n** = NSIDC, **o** = ORNL, **a** = ASF, **j** = JPL (e.g., **l0ins02** indicates an interface host workstation at LaRC).

2 In the location field, type **http://*x*0ins02u:5150** and press the **Return/Enter** key.

- The **EcMsWz-Whazzup???** screen is displayed.

3 At the bottom of the screen, click on the **Verify Mode** option button and, in the resulting pop-up menu, drag the cursor to highlight the option **What's Down**.

- The screen displays a table showing **Required Servers Currently Down . . .**, listing by mode the servers that are down.

4 Move the mouse to position the cursor on the **Performance** link, click the **Right Mouse Button**, and select **Open Link in New Window**.

- The **Performance Stats** screen is displayed in a new window, showing information that may help determine the reason for any servers being down.

5 If desired, click on the link for any host to obtain more detailed information.

- An information screen for the selected host is displayed, showing data on system memory, disk utilization, process information, and network information.

Table 7.2-2. Launching Whazzup?? and Determining What's Down

Step	What to Do	Action to Take
1	At the UNIX prompt, enter **netscape &**	enter text; press **Return/Enter**
2	Enter **http://x0ins02u:5150** in the location field	enter text; press **Return/Enter**
3	Use the **Verify Mode** option button to select **What's Down**	**click-drag**
4	Use right (or non-preferred) mouse button and the <u>**Performance**</u> link to open the **Performance Stats** screen in a new window	**(non-preferred) click; click**
5	If desired, use the link for any host to display more detailed information	**click**

7.2.2 ECS Assistant and ECS Monitor

The Whazzup tool provides a quick look capability to note whether any servers are down. The ECS Assistant and ECS Monitor tools provide additional easy-to-use tools that offer a server monitoring capability (ECS Monitor) as well as a capability to start and stop servers (ECS Assistant).

7.2.2.1 Starting ECS Assistant

Table 7.2-3 presents the steps required for starting ECS Assistant. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Log in to one of the host machines.

2   At the UNIX prompt on the host from which the ECS Assistant is to be run, type **setenv ECS_HOME /usr/ecs**, and then press the **Return/Enter** key.

- To verify the setting, type **echo $ECS_HOME**, and then press the **Return/Enter** key.

3   At the UNIX prompt, type **cd /tools/common/ea**, and then press the **Return/Enter** key.

- The working directory is changed to **/tools/common/ea**, the path where ECS Assistant is installed, and also where EcCoScriptlib may be found.

4   Type **EcCoAssist /tools/common/ea &**, and then press the **Return/Enter** key.

- The **ECS Assistant** GUI is displayed.

5   At the ECS Assistant GUI, click the **Subsystem Manager** pushbutton.

- The **Subsystem Manager** GUI is displayed.

6   Select a mode by clicking on the down arrow at the right end of the **Mode** field and then on the desired mode name in the resulting list.

- The selected mode is displayed in the **Mode** field and colored indicators show the installation status for components in that mode on the host; the legend for the color indications is at the lower right on the Subsystem Manager window.

7 In the list of subsystems, double click on the name of the subsystem of interest.

- One or more component groups appear below the selected subsystem name.

8 Double click on the name of a component group.

One or more application groups appear below the selected component group name.

9 Double click on the name of the application group of interest.

The applications or servers in the selected group are listed below the name of the group.

10 Single click on the name of an application or server of interest.

- The selected application or server is highlighted.

- Detailed installation information is displayed in the **Installation Statistics** window.

Table 7.2-3. Starting ECS Assistant

Step	What to Do	Action to Take
1	Log into one of the host machines	
2	**setenv ECS_HOME /usr/ecs**	enter text; press **Return/Enter**
3	**cd /tools/common/ea**	enter text; press **Return/Enter**
4	**EcCoAssist /tools/common/ea &** (starts the GUI)	enter text; press **Return/Enter**
5	Activate the **Subsystem Manager** pushbutton	**single-click**
6	Use the down arrow at the right end of the **Mode** field to select the desired mode	**clicks**
7	From the listed subsystems, display the component groups for the subsystem of interest	**double-click** subsystem name
8	From the listed component groups, display the application groups for any component group of interest	**double-click** component group name
9	From the listed application groups, display the applications or servers for any application group of interest	**double-click** application group name
10	From the list of applications or servers, select an application or server and display detailed information concerning its installation	**single-click** application or server name

7.2.2.2 Starting ECS Monitor

ECS Monitor provides a convenient way to monitor the status of the servers by listing their up/down condition. The **ECS Monitor** GUI has a status flag for a server indicating whether or

not that server is running, and for a server that is running, the window shows the process ID (PID), the user ID, and the start time.

Table 7.2-4 presents the steps required for starting ECS Monitor. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Log in to one of the host machines.

2   At the UNIX prompt on the host from which the ECS Assistant is to be run, type **setenv ECS_HOME /usr/ecs**, and then press the **Return/Enter** key.

- To verify the setting, type **echo $ECS_HOME**, and then press the **Return/Enter** key.

3   At the UNIX prompt, type **cd /tools/common/ea**, and then press the **Return/Enter** key.

- The working directory is changed to **/tools/common/ea**, the path where ECS Monitor is installed, and also where EcCoScriptlib may be found.

4   Type **EcCoMonitorGui /tools/common/ea *<MODE>* &**, and then press the **Return/Enter** key.

- The **ECS Monitor GUI** is displayed, showing the status (**UP** or **DOWN**) of the servers on the current host in the mode specified in the command, as indicated near the top left corner of the window.

- The status "**UP/DOWN**" indicates whether a listed server is running.

5   To update the **Server Monitor** to show the current status at any time, click on the **update** button in the GUI.

- This causes the list to update to the current status.

6   To monitor other servers, log in to other hosts and launch the ECS Monitor GUI in the desired mode, as in steps 1 - 4.

7   To exit, click the **EXIT** button.

- This terminates display of the ECS Monitor GUI.

Table 7.2-4. Starting ECS Monitor

Step	What to Do	Action to Take
1	Log into one of the host machines	
2	**setenv ECS_HOME /usr/ecs**	enter text; press **Return/Enter**
3	**cd /tools/common/ea**	enter text; press **Return/Enter**
4	**EcCoMonitorGui /tools/common/ea *<MODE>*&** (starts the GUI to monitor the specified mode)	enter text; press **Return/Enter**
5	To update to the current status at any time, activate the **Update** button	**single-click**

6	To monitor other servers, repeat steps 1 - 4 for other hosts their servers	
7	To exit, activate the **EXIT** button	**single-click**

7.2.2.3 Using EcCsIdPingServers to Ping All Servers in a Mode

The script **EcCsIdPingServers** script works with a *Sweeper* binary to ping the servers and clients in a mode to determine their status. Table 7.2-5 presents the steps required for using EcCsIdPingServers to ping all servers in a mode. If you are already familiar with the procedure, you may prefer to use this quick-step table. If you are new to the system, or have not performed this task recently, you should use the following detailed procedure:

1   Log in to one of the host machines.

2   At the UNIX prompt, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities**, and then press the **Return/Enter** key.

- The prompt reflects a change to directory **cd /usr/ecs/<*MODE*>/CUSTOM/utilities**, where **<*MODE*>** is likely to be **OPS**, **TS1**, or **TS2**.

3   Then type **EcCsIdPingServers <*MODE*>**, and then press the **Return/Enter** key.

- The result should appear similar to the following:

/usr/ecs/DEV03/CUSTOM/bin/CSS/Sweeper -nsh dss2 -nsp 22822
FoSwSweeper application started...
We made a connection with EntryId =g0icg01:17871:12451240 ---
EcSrTransportEcInGranServer
We made a connection with EntryId =g0ins02:22336:6737528 --- DsHrQuitIDL
We made a connection with EntryId =g0pls02:35211:25637 --- PlOdMsgDObj
We made a connection with EntryId =g0dis02:48315:18311 --- DsDdRequestMgrIDL
We made a connection with EntryId = g0ins02:17862:12461267 --- InAutoIngestIF
We made a connection with EntryId = g0dis02:49473:13375 --- DsStReqMgrIDL
We made a connection with EntryId = g0ins02:41566:13071 --- IoAdRpc
We made a connection with EntryId = g0ins02:18139:12460808 --- InRequestMgrIF
We made a connection with EntryId =g0dms03:42000:13266 --- EcSrTransportDDICT
We made a connection with EntryId = g0pls02:22359:6737528 ---
**   DsHrNonConfIDL681ab65e-60bc-1024-8e70-08006902a6d6**
We made a connection with EntryId = g0pls02:22346:6737528 ---
**   DsHrConformantIDL681ab65d-60bc-1024-8e70-08006902a6d6**
We made a connection with EntryId =g0mss21:64657:8006 --- EcAcOrderMgr
We made a connection with EntryId =g0mss11:41449:22898 --- EcSrTransportDarServer
We made a connection with EntryId = g0icg02:17724:12445092 --- EcRgRegistry
We made a connection with EntryId =g0mss11:41278:22739 --- InDDNTransferPkt
We made a connection with EntryId =g0psl02:35085:25466 --- Deletion
We made a connection with EntryId =g0pls02:35168:25584 --- SubscriptionQueue
We made a connection with EntryId =g0mss21:64700:8059 --- MsAcUsrRequestMgr

We made a connection with EntryId =g0mss21:64690:8059 --- MsAcRegUserMgr

We made a connection with EntryId =g0mss21:64695:8059 --- MsAcUsrProfileMgr

We made a connection with EntryId =g0pls02:35127:25527 --- DpPrSchedulerDObj

We made a connection with EntryId =g0ins02:22364:6738409 ---
    DsHrNonConfIDL681ab654-60bc-1024-8e70-08006902a6d6

We made a connection with EntryId =g0ins02:22353:6738409 ---
    DsHrConformantIDL681ab653-60bc-1024-8e70-08006902a6d6

We made a connection with EntryId =g0ins02:22342:6738409 --- DsHrQuitIDL

Table 7.2-5. Using EcCsIdPingServers to Ping All Servers in a Mode

Step	What to Do	Action to Take
1	Log into one of the host machines	
2	**cd /usr/ecs/<*MODE*>/CUSTOM/utilities**	enter text; press **Return/Enter**
3	**EcCsIdPingServers <*MODE*>**	enter text; press **Return/Enter**